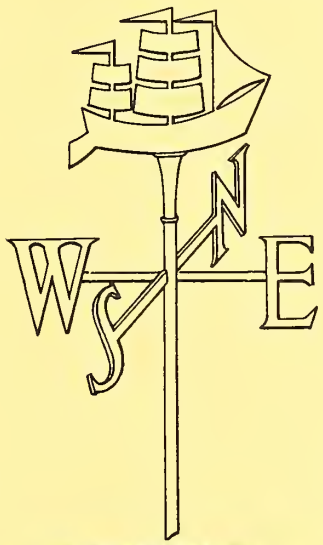
CASCADE HEAD
CLIMATOLOGICAL DATA

1936 – 1952



U.S. DEPARTMENT OF AGRICULTURE · FOREST SERVICE
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION
R. W. COWLIN, DIRECTOR
PORTLAND, OREGON JAN. 1954

CONTENTS

CASCADE HEAD CLIMATOLOGICAL DATA

1936 to 1952

Compiled by Robert H. Ruth[1/]
Cascade Head Experimental Forest

FOREWORD

The climate of the Cascade Head Experimental Forest is typical of the so-called "fog-belt" on the west slope of the Coast Range in extreme western Oregon. The forest lies centrally within this zone where the main forest cover is Sitka spruce and western hemlock with considerable red alder and Douglas-fir. The Oregon coastal area with its mild climate and abundant rainfall is one of the most productive forest zones in the world. Weather observations were taken not only to appraise the climate on the experimental forest, but also to find what correlations may exist between climate and the growth habits of forest trees and stands.

Climatological observations, using U. S. Forest Service instruments, were started in 1936 at three stations located in or near the experimental forest. Detailed locations are tabulated below:

	Three Rox	Headquarters	Neskowin Creek Camp
Legal description	Sec. 14, T. 6 S, R. 11 W. W.M. until 1942; then Sec. 23, T. 6 S., R. 11 W.	Sec. 21, T. 6 S, R. 10 W. W.M.	Sec. 10, T. 6 S, R. 10 W. W.M.
Latitude	45° 02' North	45° 02' North	45° 04' North
Longitude	124° 01' West	123° 56' West	123° 55' West
Elevation (feet)	75	160	425
Distance from Pacific Ocean (miles)	At the beach	4.5	5.7

1/ The assistance of Ruth B. Ufen in compiling the records for this report is gratefully acknowledged.

The headquarters station is in a 3-acre field near Deer Creek at the south boundary of the experimental forest. It was made a cooperative observer station in May 1948, and since that time has been maintained by the Forest Service in cooperation with the U. S. Weather Bureau. Weather Bureau instruments were installed and records are being published in the Bureau's Climatological Data for Oregon. The Three Rox station is located at the ocean beach near the mouth of Salmon River not far from the southwest corner of the experimental forest. From January 1936 through April 1942, the observations were taken by Mr. and Mrs. E. T. Allen at their residence on the north bank of the river. Beginning in June 1942, the instruments were moved one mile south to YWCA Camp Westwind on the south side of the river, and Mr. and Mrs. Bliss Clark have taken the observations there for the past 11 years. The weather observations at Neskowin Creek Camp are for 1936 and 1937 only. This station was located in a small opening in the timber along a tributary of Neskowin Creek. All stations were equipped with maximum and minimum thermometers and standard 8-inch orifice Weather Bureau or Forest Service rain gauges.

The climate of Oregon as far east as the summit of the Cascade Mountains is a marine climate, greatly influenced by the prevailing westerly winds from the Pacific Ocean. Distinguishing features of the Oregon Coast climate are equable temperatures, prolonged cloudiness, a long frost-free season, and abundant rainfall except in the summer, and fogs even then. The prevailing westerly winds are from the Pacific, usually southwest during the winter and northwest during the summer. At the same latitude in Eastern Oregon, the winters are much colder and the summers much warmer.

The marine climate is most pronounced along the immediate coast line. As the distance from the ocean increases, the climate is strongly influenced by differences in altitude, mountain barriers, and local topography. 2/ 3/

A comparison of the climate at the Three Rox station at the ocean beach with the headquarters station 4.5 miles directly inland illustrates how quickly this variation takes place. Although the differences in temperature are not great, the headquarters station has slightly higher maximum temperatures and slightly lower minimums. It receives about 20 inches a year more precipitation and has a much shorter frost-free season. At Neskowin Creek Camp, which is farther inland and higher, an even greater increase in precipitation is indicated, even though the record covers only two years. The 1937 precipitation

---

2/ Freeman, Otis W. and Martin, Howard H. The Pacific Northwest. 542 pp. Wiley, New York, 1942.

3/ Hansen, Henry P. Postglacial forest succession, climate, and chronology in the Pacific Northwest. 1947. Transactions of Amer. Philosophical Society, New Series, Vol. 37, part 1. Philadelphia. 137 pp.

of 129.04 inches at Neskowin Creek Camp was the highest of record on the experimental forest. The greatest precipitation recorded for a single 24-hour period was 6.00 inches at the Neskowin Creek Camp on November 8, 1937.

An interesting feature of the Cascade Head climate is the effect of tree crowns on precipitation. They greatly influence the amount of precipitation reaching the ground. Isaac[4/] placed two sets of rain gauges at each of several locations throughout the experimental forest. At each location one set was in the open and one under the forest canopy. Under the forest canopy he found that during period of light rains the moisture did little more than wet the foliage and eventually evaporated without falling to the ground. The rain gauges in the open collected considerable precipitation for the same period. However, during the frequent summer fogs brought in by the northwest winds this process was reversed. The fog collected on the tree crowns and dripped to the ground below. During the same period, gauges in the open collected almost no precipitation. Total annual precipitation for each gauge is shown in the following tabulation:

	Annual precipitation (1940-41) inches	
	In open	Under timber
Headquarters Station	77.6	53.0
Three Rox Station	65.9	53.1
Cascade Head Ridge, 5 miles inland	82.3	73.8
Cascade Head Ridge, 2 miles inland	78.6	99.1

At three out of four stations, crown interception was the dominant factor and the gauges in the open received 25 percent more precipitation. At the fourth station on the fog-bound Cascade Head Ridge, the rain gauges under the timber received 26 percent more precipitation than those in the open. This added precipitation was presumably picked up by the tree crowns and dropped to the ground as "fog-drip". This rather unique type of precipitation in coastal forests is an important factor in minimizing fire danger and providing additional soil moisture during the growing season.

4/ Isaac, Leo A. Fog drip and rain interception in coastal forests. 1946. Pacific N.W. Forest Experiment Station Research Note 34, pp. 15-16.

SIGNIFICANT AVERAGES

	Three Rox 1936 - 1952	Headquarters 1936 - 1952
Annual temperature	51.6°	50.7°
Daily maximum temperature	58.8°	59.6°
Daily minimum temperature	45.4°	41.9°
Date of first fall minimum of 32° or lower	Dec. 3	Oct. 31
Date of last spring minimum of 32° or lower	Mar. 7	Apr. 24
Number of days between dates of 32° or lower	271	190
Annual precipitation	69.54 in.	89.05 in.
Annual number of days with precipitation	184	180
Number of clear days)		128
Number of partly cloudy days) 1939-48		77
Number of cloudy days)		160
Number of hours of sunshine per year	2520 1/	2230 2/

1/ Data for January 1938 to April 1942 only.

2/ Data for 1936 to 1941 only.

SIGNIFICANT EXTREMES

	Three Rox 1936 - 1952	Headquarters 1936 - 1952
Highest temperatures		
Annual		
Average maximum	61.6° 1941	61.6° 1941
Average minimum	48.2° 1940-41	43.6° 1936
Average	54.9° 1940	52.2° 1940-41
Monthly		
Average maximum	73.4° July 1942	74.4° Aug. 1936
Average minimum	57.6° 3/ June 1942	53.5° Aug. 1936
Average	64.6° 3/ July 1942	64.0° Aug. 1936
Highest of record	95.0° June 1942 & July 1951	97.0° Aug. 1939
Lowest temperatures		
Annual		
Average maximum	56.0° 1952	57.9° 1948
Average minimum	42.9° 1952	40.6° 1950
Average	49.5° 1952	49.4° 1948
Monthly		
Average maximum	37.8° Jan. 1949	39.1° Jan. 1949
Average minimum	27.4° Jan. 1949	23.4° Jan. 1949
Average	32.6° Jan. 1949	31.3° Jan. 1949
Lowest of record	11.0° Jan. 1950	4.0° Jan. 1950
Early fall and late spring freezing temperatures		
Earliest date of a 32° temperature in the fall	Oct. 19, 1949	Oct. 1, 1948 & 1950
Latest date of a 32° temperature in the spring	Apr. 27, 1948	May 23, 1950
Shortest period between a spring & fall temperature of 32°	195 days, 1948	131 days, 1950
Longest period between temperatures of 32°	365 days, 1941	236 days, 1940
Precipitation		
Greatest annual	100.15", 1950	121.47", 1950
Least annual	44.96", 1936	63.08", 1944
Greatest monthly	21.79", Nov. 1937	25.98", Feb.1949
Least monthly	0.10", July 1952	0.04", Aug.1946
Greatest 24-hour	4.00", Nov.8,1937	5.00", Dec.27,1937 & Nov.26,1945
Greatest number of days per year with 0.01" or more	235 1950	213 1950
Least number of days per year with 0.01" or more	143 1936	128 1946
Greatest number of days per year with none recorded	41 July 13-Aug. 22, 1936	35 July 14-Aug. 17, 1936
Greatest annual snowfall 4/		20.5", 1950
Greatest depth on ground 4/		5.0", 1950

3/ Refer to page 29 for list of missing data.
4/ Data for Headquarters Station only, 1949-1952.

Table 1.--Three Rox. Average monthly temperature by years

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual average
1936	47.7	42.6	46.0	53.0	56.6	61.1	62.7	63.6	60.1	58.1	50.0	46.7	54.0
1937	37.8	43.9	50.3	48.7	53.6	59.1	60.1	59.9	59.2	58.0	51.6	48.8	52.3
1938	46.8	46.8	47.9	51.6	54.4	57.8	60.0	59.8	61.0	56.2	48.1	46.8	53.1
1939	46.1	43.3	47.5	52.1	54.8	56.4	60.8 1/	59.6	60.7	55.4	51.8 1/	50.1	53.2
1940	48.0	49.0 1/	50.7	53.3 1/	56.5	59.2	63.2	61.8	61.4	57.9 1/	49.0	49.0	54.9
1941	48.2	51.3	53.2 1/	52.4	55.8	60.1	62.8	61.4	59.3	50.0	46.4	46.3	53.9
1942	45.0	47.1	46.9	51.8	-	57.6 1/	64.6 1/	62.6 1/	57.1 1/	54.5	47.5 1/	45.6	-
1943	39.8	47.0	-	51.0	52.8	56.8	58.8	58.7	58.3	54.2	49.5	44.2	-
1944	43.2	43.9 1/	45.1 1/	48.7	53.6	57.2	59.0	60.6	57.1	55.6 1/	46.6 1/	44.2 1/	51.2
1945	44.5	41.3	43.9	46.9	54.3	56.3	59.1	57.4	55.1	50.9	46.6 1/	44.0	50.0
1946	43.3	39.1	44.9	47.6	55.2	57.8	61.8	58.8	56.9 1/	49.5	43.8 1/	44.0	50.2
1947	39.8	46.0	48.7	53.8	56.9	59.4	62.3	60.9	58.2	53.2	48.3	46.6	52.8
1948	43.1	40.0	44.1	46.9	54.5	61.3	62.2	61.3	58.1	51.1	44.5	38.9	50.5
1949	32.6	40.0	45.8	51.0	54.6	55.9	58.2	59.2	57.3 1/	48.3	51.4	42.6	49.7
1950	34.9	42.5	44.3	47.9	50.9	57.8	60.2	60.0	54.9	51.0	47.5	49.3	50.1
1951	41.0	43.5	41.5	47.6	53.3	56.6	59.9	58.5	-	52.7	47.0	40.3	49.9
1952	38.9	41.7	42.6	47.4	52.6	55.4	59.3	58.3	-	53.6	45.0	42.8	48.9
Average	40.1	44.1	46.5	50.1	54.4	58.0	60.9	60.1	58.3	53.5	47.9	45.3	51.6
Highest average	48.2	51.3	53.2	53.8	56.9	61.3	64.6	63.6	61.4	58.1	51.8	50.1	54.9
Year	1941	1941	1941	1947	1947	1948	1942	1936	1940	1936	1939	1939	1940
Lowest average	32.6	39.1	41.5	46.9	50.9	55.4	58.2	57.4	54.9	48.3	43.8	38.9	48.9
Year	1949	1946	1951	1945 1948	1950	1952	1949	1945	1950	1949	1947	1948	1952

1/ Refer to page 29 for list of missing data.

Table 2.--Three Rox. Average daily maximum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual average
1936	51.9	48.6	52.5	59.6	64.2	68.2	70.4	72.5	68.4	65.2	57.9	50.7	60.8
1937	42.9	49.4	55.9	55.0	60.4	66.2	66.9	68.0	66.3	64.4	56.0	54.2	58.8
1938	52.3	52.8	54.3	58.4	62.2	64.7	68.5	67.2	68.3	62.9	53.6	52.0	59.8
1939	50.7	48.6	53.9	60.6	62.9	62.5	68.8 1/	67.5	69.6	61.8	58.2 1/	54.8	60.0
1940	53.6	53.4 1/	56.9	60.3 1/	64.8	67.9	68.0	69.6	68.3	63.7 1/	55.4	54.2	61.3
1941	54.2	58.2	61.6 1/	60.1	63.4	67.3	69.8	67.8	65.8	62.2	57.4	50.8	61.6
1942	50.2	52.8	53.9	58.7	-	65.2 1/	73.4 1/	70.6 1/	64.9 1/	61.1	52.4 1/	50.0	-
1943	45.4	53.1	-	58.0	60.6	63.9	66.8	65.7	66.4	59.6	55.5	49.4	-
1944	48.3	49.9 1/	52.5 1/	55.6	62.5	65.3	66.8	68.5	64.9	61.7 1/	52.2 1/	47.9 1/	58.0
1945	49.2	50.1	49.5	52.5	61.7	65.5	69.3	65.1	62.8	57.3	50.8 1/	48.1	56.8
1946	48.0	49.2	50.2	54.4	63.8	65.9	71.2	66.3	65.0 1/	55.2	49.6 1/	47.9	57.2
1947	44.6	52.0	55.1	62.1	67.4	68.8	72.0	70.4	66.9	57.8	53.0	51.6	60.1
1948	48.5	45.0	50.4	54.0	62.9	70.8	73.2	69.4	67.6	56.9	48.9	42.9	57.5
1949	37.8	43.8	51.4	58.9	62.5	65.2	66.7	66.5	65.2 1/	54.4	56.3	46.7	56.3
1950	39.2	47.1	49.2	55.2	60.6	65.5	69.9	68.4	61.6	55.2	52.1	52.7	56.4
1951	45.4	49.1	47.7	57.3	61.8	66.0	68.3	68.5	--	58.6	51.6	44.8	-
1952	43.3	45.7	48.1	56.2	61.5	62.3	67.7	64.5	--	60.9	51.6	47.3	-
Average	47.4	50.4	52.7	57.5	62.7	66.0	69.3	68.0	66.1	59.9	53.7	49.8	58.8
Highest average	54.2	58.2	61.6	62.1	67.4	70.8	73.4	72.5	69.6	65.2	58.2	54.8	61.6
Year	1941	1941	1941	1947	1947	1948	1942	1936	1939	1936	1939	1939	1941
Lowest average	37.8	43.8	47.7	52.5	60.4	62.3	66.7	64.5	61.6	54.4	48.9	42.9	56.0
Year	1949	1949	1951	1945	1937	1952	1949	1952	1940	1949	1948	1948	1952

1/ Refer to page 29 for list of missing data.

Table 3.--Three Rox. Maximum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest Annual
1936	58	56	64	71	76	76	75	90	89	90	70	56	90
1937	50	57	68	69	70	88	71	82	86	81	66	61	86
1938	60	70	65	77	78	75	84	77	80	75	62	57	84
1939	59	60 1/	75	80 1/	89	71	84 1/	93	85	76 1/	65 1/	64	93
1940	68	64 1/	67	77 1/	75	75	73	89	81	71 1/	61	60	89
1941	58	65	75 1/	70	90	77 1/	82 1/	76	72 1/	74	72	60	90 1/
1942	61	60	64	70	-	95 1/	93 1/	90	75 1/	70	57	55	95 1/
1943	56	60	60	78	73	72	74	70	90	76	61	55	90
1944	58	58	66	66	84	72	79	94	76	75	58	57	94
1945	55	57	56	63	77	82	83	76	79	67	57	57	83
1946	55	58	56	59	80	75	92	76	73	62	58	57	92
1947	51	61	74	89	85	74	80	75	85	67	64	59	89
1948	55	51	63	66	77	82	77	77	93	70	58	52	93
1949	47	53	58	75	72	82	84	73	86	69	66	55	86
1950	52	55	61	69	84	85	84	82	78	64	61	58	85
1951	53	58	62	81	73	83	95	79	81 1/	79	65	51	95
1952	54	51	60	68	81	69	92	79	86 1/	79	61	58	92
Maximum temp.	68°	70°	75°	89°	90°	95°	95°	94°	93°	90°	72°	64°	95°
Year	1940	1938	1939 1941 1/	1947	1941	1942	1951	1944	1948	1936	1941	1939	1942 1951

1/ Refer to page 29 for list of missing data.

Table 4.--Three Rox. Average daily minimum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
1936	43.5	36.5	39.5	46.3	49.0	54.0	54.9	54.7	51.8	51.1	41.5	42.6	47.1
1937	32.7	38.4	44.7	42.3	46.8	52.0	53.3	51.8	52.0	51.5	47.2	43.4	46.3
1938	41.4	40.8	41.5	44.8	46.6	51.0	51.4	52.4	53.6	49.4	42.6	41.5	46.4
1939	41.5	38.0	41.2	43.7	46.8	50.3	52.9 1/	51.8	51.8	48.6	45.4 1/	45.4	46.4
1940	42.4	44.6 1/	44.5	46.4 1/	48.2	50.4	56.2	52.4	54.6	52.1 1/	42.7	43.8	48.2
1941	42.2	44.4	44.8 1/	44.7	48.1	53.0	55.8	55.0	52.8	50.0	46.4	41.8	48.2
1942	39.8	41.4	39.9	44.9	-	57.6 1/	55.9 1/	54.7 1/	49.3 1/	47.9	42.8 1/	41.3	-
1943	34.2	40.8	35.3 1/	44.0	45.0	49.7	50.9	51.7	50.2	48.8	43.6	39.1	44.4
1944	38.1	38.1 1/	37.8 1/	41.8	44.8	49.1	51.2	52.8	49.3	49.4 1/	41.3 1/	40.3 1/	44.5
1945	39.8	39.7	38.4	41.3	47.0	47.1	48.9	49.7	47.5	44.5	42.4 1/	40.4	43.9
1946	38.6	39.1	39.6	40.9	46.6	49.7	52.4	51.3	48.9 1/	43.9	38.0 1/	40.2	44.1
1947	35.1	40.1	42.3	45.6	46.5	50.1	52.6	51.5	49.6	48.6	43.7	41.6	45.6
1948	37.7	36.0	37.9	39.8	46.1	51.8	51.2	53.2	48.6	45.4	40.1	35.0	43.6
1949	27.4	36.2	40.2	43.1	46.7	46.6	49.7	51.8	49.8 1/	42.2	46.6	38.5	43.2
1950	30.5	38.0	39.4	40.6	41.2	50.1	50.5	51.6	48.1	46.9	42.8	45.8	43.8
1951	36.7	37.9	35.3	41.1	44.8	47.3	51.5	48.5	--	46.9	42.3	35.8	-
1952	34.6	37.4	37.0	38.5	43.6	48.4	50.8	52.0	--	46.4	38.5	38.4	-
Average	37.4	39.3	40.0	42.9	46.1	50.5	52.4	52.2	50.5	47.9	42.8	40.9	45.4
Highest average	43.5	44.6	44.8	46.3	49.0	57.6	56.2	55.0	54.6	52.1	47.2	45.8	48.2
Year	1936	1940	1941	1936	1936	1942	1940	1941	1940	1940	1937	1950	1940 1941
Lowest average	27.4	36.0	35.3	38.5	41.2	46.6	48.9	48.5	47.5	42.2	38.0	35.0	42.9
Year	1949	1948	1943 1951	1952	1950	1949	1945	1951	1945	1949	1946	1948	1952

1/ Refer to page 29 for list of missing data.

Table 5.--Three Rox. Minimum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest Annual
1936	32	26	30	35	41	49	50	50	43	40	32	31	-
1937	20	33	38	36	37	45	48	45	42	43	39	32	-
1938	35	33	33	36	39	41	45	44	48	39	33	32	32
1939	34	31	33	35	39	43	47 1/	47	46	38	39 1/	31	31
1940	32	35 1/	36	41 1/	40	45	46	49	44	43 1/	35	34	32
1941	34	38	38 1/	37	40	44	49	48	44	45	35	31	31
1942	26	32	34	40	-	43 1/	49 1/	48	43 1/	34	34	34	26
1943	15	31	33	35	38	45	44	47	39	35	35	31	15
1944	30	30	28	36	37	42	44	46	42	40	33	29	29
1945	30	30	32	32	42	42	41	41	38	34	33	28	28
1946	29	30	32	34	40	44	47	44	41	33	30	27	27
1947	24	33	32	35	38	39	47	45	40	41	33	34	24
1948	29	26	30	30	37	45	44	47	39	33	32	25	25
1949	15	23	28	34	33	41	43	46	43	31	42	27	15
1950	11	15	29	32	36	40	45	43	39	38	31	36	11
1951	20	28	30	33	39	39	45	44	41 1/	34	33	27	20
1952	23	28	31	31	34	39	43	46	39 1/	39	28	32	23
Minimum temp.	11°	15°	28°	30°	33°	39°	41°	41°	38°	31°	28°	25°	11°
Year	1950	1950	1944 1949	1948	1949	1947 1951 1952	1945	1945	1945	1949	1952	1948	1950

1/ Refer to page 29 for list of missing data.

Table 6.--Three Rox. Annual date of the last spring and first fall temperature of 32° or lower.

Year	Last date in spring with 32° or lower	First date in fall with 32° or lower	No. of days between dates of 32° or lower
1936	March 31	November 2	216
1937	January 29	December 23	328
1938	None	December 15	349
1939	February 20	December 24	307
1940	January 11	None	355
1941	None	December 31	365
1942	February 22	None	312
1943	February 22	December 5	286
1944	March 27	December 3	251
1945	April 1	December 12	255
1946	March 18	November 8	235
1947	March 26	None	280
1948	April 27	November 8	195
1949	March 31	October 19	202
1950	April 21	November 13	206
1951	March 31	December 7	251
1952	April 20	November 24	217
Average	March 7	December 3	271

Table 7.--Three Rox. Monthly and annual precipitation.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
						Inches							
1936	8.13	5.45	5.04	1.61	5.17	2.80	1.59	.19	1.86	1.31	1.58	10.23	44.96
1937	6.48	9.43	6.02	8.07	3.18	5.44	.50	3.01	2.18	5.81	21.79	14.32	86.23
1938	9.09	7.21	11.85	7.02	2.64	1.02	.63	.86	1.32	6.03	8.77	6.48	62.92
1939	8.65	11.87	4.45	2.41	1.54	3.89	1.57	1.98	1.17	6.57	4.34	14.43	62.87
1940	5.01	15.63 1/	8.59	4.79	1.73	0.35	2.22	0.21	1.74	8.26 1/	7.97	7.33	63.83
1941	10.75	3.04	2.73 1/	2.78	4.64	4.98	.40	2.50	7.31	3.65	10.30	14.84	67.92
1942	7.09	7.66	5.03	3.88	-	-	1.24 1/	0.13	.62 1/	4.61	20.63	13.67	-
1943	7.55	8.13	9.30	4.93	2.98	4.07	.92	2.89	.37	10.37	4.24	6.41	62.16
1944	5.66	5.70	5.13	6.39	1.98	.92	.22	.56	2.83	3.27	8.49	4.29	45.44
1945	10.83	9.70	9.18	5.54	5.12	.65	1.23	.70	6.70	2.79	15.48	11.11	79.03
1946	11.62	11.36	8.96	4.05	1.84	5.37	1.56	.14	1.72	9.68	10.93	12.90	80.13
1947	7.63	6.15	5.00	4.91	.27	8.37	1.01	1.14	2.72	15.34	6.54	10.47	69.55
1948	7.62	10.45	7.66	7.93	7.23	.89	1.21	1.37	4.56	5.36	8.02	14.39	76.69
1949	1.94	18.30	7.66	1.81	4.43	2.16	1.20	1.01	2.11	5.38	9.49	9.12	64.61
1950	13.36	12.98	13.39	5.83	2.32	2.26	2.05	2.44	2.28	14.46	13.75	15.03	100.15
1951	15.14	10.14	9.05	2.40	3.96	1.71	1.34	.79	5.35	11.08	9.78	11.20	81.94
1952	14.96	9.67	12.71	3.01	1.39	2.26	.10	1.42	.74	1.55	3.58	12.74	64.13
Average	8.91	9.58	7.75	4.55	3.15	2.95	1.12	1.26	2.68	6.80	9.74	11.12	69.54
Highest	15.14	18.30	13.39	8.07	7.23	8.37	2.22	3.01	7.31	15.34	21.79	15.03	100.15
Year	1951	1949	1950	1937	1948	1947	1940	1937	1941	1947	1937	1950	1950
Lowest	1.94	3.04	2.73	1.61	.27	.35	.10	.13	.37	1.31	1.58	4.29	44.96
Year	1949	1941	1941	1936	1947	1940	1952	1942	1943	1936	1936	1944	1936

1/ Refer to page 29 for list of missing data.

Table 8.--Three Rox. Number days with .01 inch or more precipitation by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1936	22	17	20	12	15	11	5	2	6	5	7	21	143
1937	19	24	20	21	13	11	2	7	8	15	25	20	185
1938	18	22	22	14	10	5	4	3	8	16	18	18	158
1939	25	23	17	11	9	15	7	5	5	15	15	24	171
1940	16	26	21	15	11	5	8	2	9	19 1/	18	14	164
1941	16	11	9 1/	14	18	13	4	10	21	18	15	23	172
1942	18	22	21	19	1/	17 1/	8 1/	2	6 1/	18	27 1/	26	-
1943	17	13	16 1/	21	18	14	5	12	5	20	14	12	167
1944	18	23 1/	18 1/	23	14	10	3	8	15	12 1/	20 1/	19 1/	183
1945	22	24	27	20	14	9	3	4	14	13	28 1/	26	204
1946	26	24	26	20	10	22	8	3	9 1/	18	21 1/	21	208
1947	21	12	20	18	7	17	10	6	12	25	20	25	193
1948	16	22	23	23	19	6	12	12	11	16	25	24	209
1949	15	23	21	13	13	11	8	10	11 1/	15	16	27	184
1950	29	26	27	21	11	16	9	10	5	25	26	30	235
1951	27	21	26	4	17	7	12	4	8 1/	19	21	21	187
1952	28	22	24	12	14	17	4	10	11 1/	6	10	27	185
Average	21	21	21	17	13	12	7	7	10	17	20	22	184
Greatest number	29	26	27	23	19	22	12	12	21	25	28	30	235
Year	1950	1940 1950	1945 1950	1944 1948	1948	1946	1948 1951	1943 1948	1941	1947 1950	1945	1950	1950
Least number	15	11	9	4	7	5	2	2	5	5	7	12	163
Year	1949	1941	1941	1951	1947	1940	1937	1936 1940	1939 1943 1950	1936	1936	1943	1940

1/ Refer to page 29 for list of missing data. Headquarters or Newport, Oregon records substituted for missing days.

Table 9.--Three Rox. Hours of sunshine by months and years.[1]

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Percent
1936	102	109	210	208	271	251	360	364	284	249	202	78	60
1937	128	106	151	177	283	230	352	326	238	212	83	111	54
1938	129	120	171	218	289	275	352	316	225	180	123	119	56
1939	111	98	178	252	276	230	333[2]	239	301	169	159[2]	75	54
1940	129	87[2]	165[2]	230[2]	341	396	300	340	226	142[2]	140	121	58
1941	117	145	259[2]	240	252	267	356	260	206	155	130	92	55
Average hours sunshine 1936-41	119	111	189	221	285	275	342	308	247	184	140	99	56
Greatest no. hrs.	129	145	259	252	341	396	360	364	301	249	202	119	60
Year	1938 1940	1941	1941	1939	1940	1940	1936	1936	1939	1936	1936	1938	1936
Least no. hrs.	102	87	151	146	252	230	300	239	206	142	83	75	54
Year	1936	1940	1937	1942	1941	1937 1939	1940	1939	1941	1940	1937	1939	1937 1939

1/ Hours of sunshine each day were estimated by observer. Total sunshine each year has been compared with total possible sunshine between official sunrise and sunset to arrive at the average annual percent of possible sunshine.

2/ Refer to page29 for list of missing data. Substituted Headquarters records on missing days.

Table 10--Headquarters. Average Monthly temperature by years

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual average
1936	43.6	38.1	44.1	50.1 1/	57.0 1/	59.1	61.3 1/	64.0	59.3 1/	56.0	45.8 1/	43.0	51.9
1937	32.6	40.4	47.0	45.5	51.9	57.8	59.0	58.0 1/	58.4	56.5	49.4	45.4	50.2
1938	42.6	43.7	45.2	48.8	52.0	56.2	59.3	58.5	59.8	54.1	44.2	42.7	50.6
1939	42.7	40.5	45.4	49.8	52.8 1/	54.9	59.5 1/	59.3	58.9	53.8	47.7	46.5	51.0
1940	43.6	46.4	48.8	51.1	54.4	57.5	59.2	60.6	60.4	56.3	44.1	44.2	52.2
1941	44.1	48.2	50.5	50.2	54.1	57.8	60.8	59.7	57.7	53.6	48.2	42.2	52.2
1942	40.4	43.4	44.5	48.5	52.0	56.9	61.8	61.9	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	41.4 1/	43.2	44.6	47.9	52.1	55.6	59.4	60.6	58.5	55.6	46.1	41.1	50.5
1945	43.4	44.5	43.7	47.0	52.6	-	59.9	60.7	56.7	51.2	45.0	43.6	-
1946	42.0	43.1	45.0	45.7	51.7	54.9	60.4 1/	59.2	57.5	49.7	44.4	43.0	49.7
1947	39.0	48.0	48.8	52.1	54.9	56.8	59.7	59.7	59.2	53.7	47.6	44.1	52.0
1948	41.9	42.6	43.9	46.4	52.7	58.9	58.1	59.1	57.0	50.2	43.6	38.5	49.4
1949	31.3	40.7	45.7	48.9	53.2	54.5	57.6	57.9	56.6	47.3 1/	-	41.2	-
1950	34.1	42.2	43.8	47.2	49.3	56.5	58.9	60.1	56.6	50.5	46.8	49.3	49.6
1951	41.3	43.9	41.7	49.5	52.8	56.7	59.7	58.8	57.2	53.3	47.0	40.1	50.1
1952	38.3	42.1	43.2	48.6	52.1	54.7	60.3	60.4	58.3	55.7	42.3	42.5	49.9
Average	40.1	43.2	45.4	52.4	52.8	56.6	59.7	59.9	48.1	53.2	45.9	43.2	50.7
Highest av.temp.	44.1	48.2	50.5	52.1	57.0	59.1	61.8	64.0	60.4	56.5	49.4	46.5	52.2
Year	1941	1941	1941	1947	1936	1936	1942	1936	1940	1937	1937	1939	1940 1941
Lowest average	31.3	40.4	41.7	45.5	49.3	54.5	57.6	57.9	56.6	47.3	42.3	40.1	49.4
Year	1949	1937	1951	1937	1950	1949	1949	1949	1949 1950	1949	1952	1951	1948

1/ Refer to page 29 for list of missing data.

Table 11.--Headquarters. Average daily maximum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual average
1936	50.8	44.4	52.5	61.9 1/	65.5 1/	67.0	70.4 1/	74.4	69.3 1/	64.2	53.4 1/	46.9	60.1
1937	37.6	45.2	53.5	52.5	61.8	67.6	69.4	69.1 1/	68.5	66.0	55.6	51.4	59.5
1938	49.1	51.4	53.0	57.7	62.4	65.8	71.1	69.0	70.5	63.4	51.7	48.8	59.5
1939	49.0	47.2	54.1	60.6	63.6 1/	63.2	70.2 1/	70.4	70.5	62.6	55.8	52.3	60.0
1940	50.5	52.6	57.2	60.9	65.8	69.9	68.9	72.1	69.6	64.5	52.2	50.9	61.3
1941	50.9	57.8	62.2	61.2	64.5	67.1	72.9	68.5	66.7	62.6	56.0	48.4	61.6
1942	48.2	51.6	53.5	57.2	60.2	65.6	71.8	71.3	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	49.2 1/	51.2	55.2	56.2	62.2	64.9	69.4	71.4	69.3	64.5	53.6	48.0	59.6
1945	49.9	51.3	50.7	54.9	61.9	-	73.6	72.2	67.5	61.9	52.1	49.9	-
1946	48.6	50.2	53.2	56.3	63.6	64.6	71.3 1/	69.8	67.6	58.2	52.0	48.5	58.7
1947	45.4	56.6	57.8	62.0	66.3	65.9	69.2	70.4	71.1	60.7	53.9	50.4	60.8
1948	50.2	47.6	52.1	54.0	60.8	68.8	68.0	67.5	68.7	60.5	51.2	45.2	57.9
1949	39.1	47.7	54.3	58.4	63.0	66.8	70.5	69.8	68.7	59.0 1/	58.5	47.4	58.6
1950	40.2	49.8	51.1	57.6	60.5	65.4	70.8	72.5	67.6	58.1	54.4	54.2	58.5
1951	47.5	51.3	50.5	60.2	62.8	68.0	69.4	70.5	66.9	60.8	54.2	46.4	59.0
1952	43.3	48.2	50.7	58.7	62.5	62.9	71.1	69.5	70.4	66.1	51.4	49.0	58.6
Average	46.8	50.3	53.9	58.1	63.0	66.2	70.5	70.5	68.9	62.2	53.7	49.2	59.6
Highest average	50.9	57.8	62.2	62.0	66.3	69.9	73.6	74.4	71.1	66.1	58.5	54.2	61.6
Year	1941	1941	1941	1947	1947	1940	1945	1936	1947	1952	1949	1950	1941
Lowest average	39.1	47.2	50.5	52.5	60.2	62.9	68.0	67.5	66.7	58.1	51.2	45.2	57.9
Year	1949	1939	1951	1937	1942	1952	1948	1948	1941	1950	1948	1948	1948

1/ Refer to page 29 for list of missing data.

Table 12.--Headquarters. Maximum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Highest Annual
1936	56	53	69	77 1/	86 1/	81	81 1/	83	84 1/	81	65 1/	53	86
1937	47	53	62	66	76	89	74	85 1/	89	77	62	59	89
1938	54	68	65	76	81	79	89	80	83	72	61	58	89
1939	55	57	74	79	90 1/	77	92 1/	97	83	74	62	62	97
1940	64	61	73	77	81	86	74	92	82	75	60	59	92
1941	59	65	75	74	91	81	82	78	75	71	67	62	91
1942	61	55	64	72	81	93	90	91	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	57 1/	58	75	78	87	78	86	94	85	75	60	58	94
1945	57	57	61	69	83	-	86	84	76	72	64	60	-
1946	55	56	65	67	80	81	95 1/	82	83	71	61	52	95
1947	53	65	76	92	89	74	76	79	85	69	64	59	92
1948	61	56	73	69	78	89	77	74	90	70	55	52	90
1949	46	59	62	76	83	83	88	75	89	71 1/	66	57	89
1950	55	59	66	76	82	85	89	87	85	70	65	66	89
1951	55	61	70	84	74	86	94	82	88	76	62	56	94
1952	55	58	65	72	85	71	91	80	90	86	63	60	91
Average	55.6	58.8	68.4	75.2	82.9	82.2	85.2	83.9	84.5	74.0	62.5	58.2	97
Maximum	64	68	76	92	91	93	95	97	90	86	67	66	97
Year	1940	1938	1947	1947	1941	1942	1946	1939	1948 1952	1952	1941	1950	1939

1/ Refer to page 29 for list of missing data.

Table 13.--Headquarters. Average daily minimum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Average
1936	38.2	31.8	35.6	38.3 1/	48.4 1/	51.2	52.1 1/	53.5	49.2 1/	47.9	38.2 1/	39.0	43.6
1937	27.5	35.5	40.5	38.6	42.0	47.9	48.7	46.9 1/	48.3	47.0	43.1	39.5	42.1
1938	35.7	36.0	37.3	39.8	41.7	46.6	47.5	48.0	49.0	44.8	36.8	36.6	41.6
1939	36.4	33.9	36.8	39.0	42.0 1/	46.6	48.7 1/	48.3	47.4	45.0	39.6	40.7	42.0
1940	36.6	40.2	40.4	41.4	43.1	44.9	49.5	49.0	51.2	48.1	36.1	37.5	43.2
1941	37.3	38.5	38.9	39.2	43.6	48.5	48.8	50.9	48.8	44.7	40.4	36.1	43.0
1942	32.6	35.3	35.6	39.9	43.8	48.2	51.8	52.6	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	33.6 1/	35.3	34.1	39.7	42.0	46.4	49.5	49.8	47.7	46.8	38.7	34.2	41.5
1945	36.8	37.7	36.7	39.1	43.4	-	46.3	49.2	46.0	40.4	38.0	37.3	-
1946	35.4	36.0	36.8	35.1	39.9	45.3	49.6 1/	48.6	47.5	41.2	36.9	37.5	40.8
1947	32.6	39.5	39.9	42.2	43.5	47.7	50.2	49.1	47.4	46.7	41.4	37.9	43.2
1948	33.6	37.7	35.8	38.8	44.5	49.0	48.3	50.7	45.2	40.0	35.9	31.8	40.9
1949	23.4	33.7	37.1	39.3	43.4	42.2	44.7	45.9	44.4	35.5 1/	-	35.0	-
1950	28.0	34.6	36.4	36.7	38.0	47.5	46.9	47.6	45.5	42.9	39.1	44.4	40.6
1951	35.0	36.5	32.9	38.7	42.7	45.3	49.9	47.1	47.4	45.8	39.7	33.8	41.2
1952	33.3	35.9	35.7	37.8	41.7	46.5	49.4	51.3	46.2	45.2	33.2	35.9	41.0
Average	33.5	36.1	36.9	39.0	42.7	46.9	48.9	49.3	47.4	44.1	38.4	37.1	41.9
Highest average	38.2	40.2	40.5	42.2	48.4	51.2	52.2	53.5	51.2	48.1	43.1	44.4	43.6
Year	1936	1940	1937	1947	1936	1936	1936	1936	1940	1940	1937	1950	1936
Lowest average	23.4	31.8	32.9	35.1	38.0	42.2	44.7	45.9	44.4	35.5	33.2	31.8	40.6
Year	1949	1936	1951	1946	1950	1949	1949	1949	1949	1949	1952	1948	1950

1/ Refer to page 29 for list of missing data.

Table 14.--Headquarters. Minimum temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Lowest annual
1936	28	22	30	30 1/	40 1/	47	47 1/	48	41 1/	39	28 1/	30	22
1937	15	31	31	31	32	41	41	41	38	38	33	28	15
1938	28	27	28	30	34	37	40	39 1/	43	34	27	24	24
1939	29	26	28	30	34 1/	38	41 1/	41	39	32	33	27	26
1940	28	30	31	34	34	39	40	33	39	37	28	23	23
1941	25	31	33	32	35	39	44	42	39	38	29	26	25
1942	22	27	30	34	32	38	44	46	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	27 1/	27	24	32	33	39	41	42	39	34	29	24	24
1945	45	28	29	30	37	-	40	40	36	31	29	24	-
1946	26	28	30	31	32	40	44 1/	42	38	30	28	23	23
1947	22	25	31	31	36	40	44	41	37	38	29	30	22
1948	24	23	29	28	35	41	39	42	35	30	26	22	22
1949	12	20	28	30	30	35	36	39	34	23 1/	-	22	12
1950	4	11	26	28	31	37	40	40	34	32	25	33	4
1951	18	26	27	29	35	38	43	41	37	32	29	25	18
1952	22	28	29	29	31	37	43	43	38	36	21	28	21
Lowest annual	4	11	24	28	30	35	36	33	34	23 1/	21	22	4
Year	1950	1950	1944	1948 1950	1949	1949	1949	1940	1949	1949 1950	1952	1948 1949	1950

1/ Refer to page 29 for list of missing data.

Table 15.--Headquarters. Annual date of last spring and first fall temperature of 32° or lower.

Year	Last date in spring with 32° or lower	First date in fall with 32° or lower	No. of days between dates of 32° or lower
1936	April 9	November 2	207
1937	May 5	December 1	210
1938	April 13	November 11	212
1939	April 30	October 25	178
1940	March 12	November 4	236
1941	April 17	November 17	214
1942	May 13	October 28 1/	168
1943	-	-	-
1944	April 21	November 12	204
1945	April 13	October 18	188
1946	May 4	October 30	179
1947	April 11	November 5	208
1948	April 27	October 1	156
1949	May 4	October 7	156
1950	May 23	October 1	131
1951	April 21	October 30	193
1952	May 4	November 15	194
Annual average	April 24	October 31	190

1/ Headquarters station not occupied. This date taken from footnote on Three Rox Meterological Record, October 1942.

Table 16.--Headquarters. Monthly and annual precipitation

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual total
						Inches							
1936	16.29	10.54	9.45	2.43 1/	7.62 1/	3.67	2.49	.23	2.23 1/	1.33	1.82	13.29	71.39
1937	10.62	13.45	7.42	12.19	3.85	6.14	.10	2.64	2.58	5.91	24.50	19.34	108.74
1938	10.43	9.61	15.73	6.99	2.58	1.61	0.51	1.11	1.59	6.27	11.91	8.77	77.11
1939	11.55	15.38	6.26	2.98	1.87 1/	3.90	1.87 1/	1.96	1.96	4.54	4.37	16.75	73.39
1940	6.44	20.20	10.57	6.44	2.63	0.30	2.44	0.25	2.01	8.75	9.80	9.62	79.45
1941	10.41	3.59	3.80	4.14	5.68	2.21	0.06	2.19	7.92	4.90	11.54	19.42	75.86
1942	8.32	10.08	6.86	4.92	4.94	4.30	3.64	0.19	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	8.06 1/	8.87	6.32	8.52	3.14	3.06	0.43	0.80	3.27	4.51	10.48	5.62	63.08
1945	13.86	13.30	14.20	8.74	5.83	.82 1/	1.17	1.00	9.47	3.12	21.61	13.00	106.12
1946	16.83	14.76	10.16	5.86	1.41	5.87	1.45 1/	0.04	2.29	15.17	13.04	20.08	106.96
1947	10.32	7.88	6.31	5.98	0.56	9.00	1.31	1.15	3.04	18.81	10.56	13.47	88.39
1948	10.48	14.38	10.15	10.06	7.59	1.04	1.50	1.71	4.97	5.57	12.97	20.11	100.53
1949	3.72	25.98	8.52	2.90	6.00	2.56	1.43	1.25	2.80	7.92	12.93	16.09	92.10
1950	19.18 2/	17.19	17.28	7.26	3.22	2.95	2.15	2.06	2.99	15.19	16.05	15.95	121.47
1951	19.17	12.26	10.27	3.12	4.40	0.64	1.11	.90	6.14	13.64	10.81	14.93	97.39
1952	15.67	11.61	14.49	3.47	1.92	2.14	0.09	2.67	1.09	1.61	3.85	15.21	73.82
Average	11.96	13.07	9.86	6.00	3.95	3.14	1.36	1.26	3.62	7.82	11.75	14.78	89.05
Highest	19.18	25.98	17.28	12.19	7.62	9.00	3.64	2.67	9.47	18.81	24.50	20.11	121.47
Year	1950	1949	1950	1937	1936	1947	1942	1952	1945	1947	1937	1948	1950
Lowest	3.72	3.59	3.80	2.90	0.56	0.30	0.06	0.04	1.09	1.33	1.82	5.62	63.08
Year	1949	1941	1941	1949	1947	1940	1941	1946	1952	1936	1936	1944	1944

1/ Refer to page 29 for list of missing data.
2/ Water equivalent of snow estimated using 10" equals 1" water.

Table 17.--Headquarters. Monthly annual snowfall by years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Total for 12 mos. to July 1
							Inches							
1949	8.3	4.9	--	--	--	--	--	--	--	--	--	--	13.2	13.2
1950	20.0	.5	--	--	--	--	--	--	--	--	--	--	20.5	20.5
1951	--	--	11.6	--	--	--	--	--	--	--	--	5.0	16.6	11.6
1952	1.5	2.1	.3	--	--	--	--	--	--	--	--	--	3.9	8.9
Average 1949-52	7.45	1.88	2.98	--	--	--	--	--	--	--	--	1.25	13.55	13.55

Table 18.--Headquarters. No. of days with .01 inch or more precipitation by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1936	22	18	20	16	13[1]	13	9	2	6	3	4	23	149
1937	20	24	22	25	17	13	2	9	9	17	25	21	204
1938	19	22	20	13	11	7	3	4	10	15	18	19	161
1939	24	24	17	12	13[1]	15	7[1]	6	6	16	16	24	180
1940	18	26	21	18	10	5	9	2	13	20	19	20	181
1941	19	15	13	14	20	16	4	9	22	21	16	24	193
1942	17	21	22	21	16	15	9	4	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	17[1]	23	20	22	14	12	7	10	15	15	21	21	197
1945	26	23	28	23	12	-	4	2	5	5	15	13	-
1946	13	9	11	9	3	8	4[1]	3	11	20	19	18	128
1947	21	12	19	18	6	16	10	6	7	23	21	24	183
1948	15	21	22	24	18	6	10	12	11	14	24	24	201
1949	12	23	19	11	12	11	7	11	9	13	17	25	170
1950	29	23	28	19	10	14	6	6	4	25	23	26	213
1951	27	20	25	4	15	10	9	2	7	22	20	22	183
1952	25	21	25	12	17	15	2	10	11	7	9	27	181
Average	20	20	21	16	13	12	6	6	10	16	18	22	180
Greatest number	29	26	28	25	20	16	10	12	22	25	25	27	213
Year	1950	1940	1945 1950	1937	1941	1941 1947	1947 1948	1948	1941	1950	1937	1952	1950
Least number	12	9	11	4	3	5	2	2	4	3	4	13	128
Year	1949	1946	1946	1951	1946	1940	1952 1937	1936 1940 1945 1951	1950	1936	1936	1945	1946

1/ Refer to page 29 for list of missing data.

Table 19.--Headquarters. Hours of sunshine by months and years.[1/]

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual percent
1936	114	126	183	164[2/]	216[2/]	275	350	261	284	221	197	60	55
1937	104	64	116	117	234	210	342	301	226	188	81	88	46
1938	80	78	144	147	236	261	270	260	218	120	105	47	44
1939	88	72	165	169	221[2/]	218	335[2/]	287	298	167	142	68	50
1940	136	83	163	242	322	395	282	331	176	128	116	88	55
1941	98	124	231	216	180	212	424	223	158	164	120	53	49
Average hours sunshine 1936-41	103	91	167	176	235	262	334	277	227	165	127	67	50
Greatest no. hrs.	136	126	231	242	322	395	424	331	298	221	197	88	55
Year	1940	1936	1941	1940	1940	1940	1941	1940	1939	1936	1936	1937 1940	1936 1940
Least no. hrs.	80	64	116	117	180	210	270	223	158	120	81	47	44
Year	1938	1937	1937	1937	1941	1937	1938	1941	1941	1938	1937	1938	1938

1/ Hours of sunshine each day were estimated by observer. Total sunshine for year has been compared with total possible sunshine between official sunrise and sunset to arrive at the average annual percent of possible sunshine.

2/ Refer to page 29 for list of missing data. Substituted Three Rox records on missing days.

Table 20.--Headquarters. Number of clear, partly cloudy, and cloudy days by months and years.[1/]

Years	January			February			March			April			May			June			July			August			September			October			November			December			Annual Percent		
	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy	Clear	Partly cloudy	Cloudy
1938	-	-	-	-	-	-	-	-	-	10	5	15	19	4	8	15	5	10	20	5	6	22	3	6	15	5	10	12	7	12	10	3	17	8	5	18	-	-	-
1939	7	5	19	4	5	19	14	3	14	12	8	10	15	5	11	13	5	12	21	6	4	23	1	7	13	7	10	13	4	14	10	9	11	6	6	19	41	18	41
1940	10	4	17	6	2	21	9	10	12	16	5	9	18	8	5	23	6	1	16	5	10	16	14	1	8	5	17	6	3	22	9	2	19	8	2	21	40	18	42
1941	6	13	12	8	8	12	15	4	12	13	1	16	10	1	20	8	3	19	26	1	4	6	13	12	6	6	18	7	10	14	9	4	17	3	2	26	32	18	50
1942	7	7	17	8	3	17	11	10	10	6	4	20	11	1	19	9	5	16	14	4	13	22	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1943	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1944	-	-	-	10	7	12	7	17	7	5	13	12	17	8	6	11	12	7	11	19	1	12	13	6	14	7	9	10	10	11	5	16	9	10	10	11	-	-	-
1945	11	2	18	6	14	8	2	16	3	5	15	10	6	18	7	-	-	-	21	8	2	21	3	7	14	4	12	14	7	10	2	7	21	6	2	23	-	-	-
1946	6	1	24	1	8	19	5	12	14	11	9	10	16	6	9	8	7	5	-	-	-	-	-	-	11	12	7	10	4	17	6	5	19	6	5	20	-	-	-
1947	7	5	19	8	10	10	9	3	19	9	4	17	18	4	9	10	10	10	14	5	12	11	10	10	16	5	9	2	4	25	5	4	21	5	3	23	31	18	51
1948	15	6	10	6	4	19	5	6	20	4	10	16	6	11	14	11	8	11	12	10	9	4	7	20	16	7	7	8	8	15	4	4	22	4	3	24	26	23	51
Average	9	5	17	6	7	15	9	9	13	9	7	14	14	6	11	12	7	11	17	7	7	15	8	8	13	6	11	9	6	16	7	6	17	6	4	21	35	21	44
Greatest number	15	13	24	10	14	21	15	17	20	16	15	20	19	18	20	23	12	19	26	19	13	23	14	20	16	12	18	14	10	25	10	16	22	10	10	26	41	23	51
Year	'48	41	46	'44	'45	'40	'41	'44	'48	'40	'45	'42	'38	'45	41	'40	'44	'41	'41	'44	'42	'39	'40	'48	'47 '48	'46	'41	'45	'44	'47	'39	'44	'48	'44	'44	'41	'39 '40	'48	'47 '48
Least number	6	1	10	1	2	8	2	3	3	4	1	9	6	1	5	8	3	1	11	1	1	4	1	1	6	4	7	2	3	10	2	2	9	3	2	11	26	18	27
Year	'41 '46	46	48	'46	'40	'45	'45	39 '47	'45	'48	'41	'40	'45 '48	'41 '42	'40	'41 '46	'41	'40	'44	'41	'44	'48	39	'40	'41	'45	'46 '48	'47	'40	'45	'45	'40	'44	'41	'40 '41 '45	'44	'48	'41	'44

1/ The character of the day was estimated by the observer based on the following guides: Clear--when the sky averages 3/10 or less obscured; Partly cloudy--when from 4/10 to 7/10 obscured; Cloudy--when more than 7/10 obscured.

2/ Applies to 1939-41 and 1947-48 only.

Table 21.--Neskowin Creek Camp. Temperature by months and years.

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual average
	Average monthly temperature												
1936	44.9	39.4	45.5[1]	55.3[1]	57.6[1]	60.8	64.1	68.2	61.6	57.5[1]	49.6[1]	46.3	54.2
1937	34.3[1]	42.9	49.3	44.8	51.0[1]	56.3	57.9	58.5	58.4	56.0[1]	49.8	45.3[1]	50.4
Average 1936-37	39.6	41.2	47.4	50.0	54.3	58.6	61.0	63.4	60.0	56.8	49.7	45.8	52.2
	Average daily maximum temperature												Annual Average
1936	50.9	46.7	55.6[1]	65.1[1]	69.1[1]	74.1	78.8	82.7	68.4	65.7[1]	53.2[1]	48.9	63.3
1937	40.7[1]	49.6	58.0	51.4	60.8[1]	65.0	67.3	68.4	67.1	65.2[1]	56.1	50.9[1]	58.4
Average 1936-37	45.8	48.2	56.8	58.2	65.0	69.6	73.0	75.6	67.8	65.4	54.6	49.9	60.8
	Maximum temperature												Highest Annual
1936	57	62	69	84	79[1]	84	91	98	80	82[1]	60[1]	57	98
1937	47[1]	60	71	65	72[1]	86	72	82	88	79[1]	66	58[1]	88
	Average daily minimum temperature												Annual Average
1936	38.8	32.2	35.4[1]	45.6[1]	46.0[1]	47.5	49.5	53.6	54.9	49.2[1]	46.2[1]	43.7	45.2
1937	27.9[1]	36.2	40.7	38.2	41.2	47.6	48.6	48.5	49.6	46.7	43.6	39.7[1]	42.4
Average 1936-37	33.4	34.2	38.0	41.9	43.6	47.6	49.0	51.0	52.2	48.0	44.9	41.7	43.8
	Minimum temperature												Lowest Annual
1936	22	22	22[1]	30	32[1]	35	40	46	42	41[1]	28[1]	28	22
1937	18[1]	30	31	30	31	40	40	41	38	38[1]	35	32[1]	18

1/ Refer to page 29 for list of missing data.

Table 22.--Neskowin Creek Camp. Annual date of last spring and first fall temperature of 32° or lower.

Year	Last date in spring with 32° or lower	First date in fall with 32° or lower	Number of days between dates of 32° or lower
1936	May 31	November 1	153
1937	May 5	December 19	228
Average	May 18	November 25	190

Table 23.--Neskowin Creek Camp. Monthly and annual precipitation

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual
1936	19.76	11.49	12.28	2.43	8.83	4.48	1.79	.19	2.35	1.80	1.49[1/]	17.64	84.53
1937	11.46	15.02	8.45	13.55	4.43	7.16	.21	3.97	3.13	7.50[1/]	30.32	23.84	129.04
Average	15.61	13.26	10.36	7.99	6.63	5.82	1.00	2.08	2.74	4.65	15.90	20.74	106.78
Number of days with .01" or more precipitation													
1936	22	18	17	16	15	15	6	2	5	5	6	25	152
1937	20	24	19	23	16	13	5	10	8	16[1/]	24	19	175
Average	21	21	18	20	16	14	6	6	6	10	15	22	164

1/ Refer to page 29 for list of missing data.

Table 24.--Neskowin Creek Camp. Hours of sunshine by months and years.[1/]

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual percent
1936	89	102	195	196	236	238	395	421	345	221	157	30	59
1937	54[2/]	47	100	136	279	210	356	315	213	153[2/]	47	75	44

1/ Hours of sunshine each day were estimated by observer. Total sunshine for year has been compared with total possible sunshine between official sunrise and sunset to arrive at the average annual percent of possible sunshine.

2/ Refer to page 29 for list of missing data. Substituted Headquarters records on missing days.

LIST OF MISSING DATA

Three Rox Station

1939 July 14, November 15 to 17.
1940 February 19, April 3, October 19.
1941 March 2 to 6.
1942 May 1 to 31, June 1 to 10, July 6, 24 to 29, September 8 to 11.

Maximum and minimum temperatures and total precipitation recorded for following periods but daily readings not taken:

1942 August 25 to 29, November 12 to 19.
1943 March 10 to 28.
1944 February 27 to 29, March 1 to 8, October 3 to 10, November 2 to 7, December 20 to 27.
1945 November 20 to 23.
1946 September 1 to 4, November 26 to 28.
1949 September 6 to 17.
1951 September 4 to 20, 23 to 27.
1952 September 3 to 21.

Headquarters Station

1936 April 3, May 27, July 14, 16, September 15, November 16.
1937 August 19.
1939 May 21, July 17, 23.
1942 September 18 to December 31.
1943 Entire year.
1944 January 1 to 5.
1945 June 1 to 15.
1946 July 1 to 3.
1949 October 29 to November 18 minimum temperatures missing.

Neskowin Creek Camp

1936 March 30, April 30, May 31, October 5, November 1, 7, 8, 11, 12, 27 to 30.
1937 January 13, 22 to 25, May 8, 9, October 27, December 24 to 27.